Frankly Speaking

Stepping Up to the Parking Problem

TO MOST PEOPLE who drive in urban centers the parking problem appears easy to solve. In the minds of many, all you have to do is tear down some old buildings, scatter some cinders around, and set up a sign reading "Parking —All Day—10c."

Yet, it is all too true that parking is the kind of a problem which has led many to believe will solve itself somehow. Proof of that is shown by the large number of cities which, despite choked streets, jammed parking lots, and grumbling motorists, have done virtually nothing toward providing needed facilities.

Fortunately, public officials and civic leaders are beginning to see that parking is a full-blown problem which cannot be solved by expediencies such as utilizing vacant sites for parking lots until land owners decide to erect buildings. It is beginning to be realized that the possession, or lack of permanent and adequate parking facilities, will "make or break" established downtown business districts.

Much credit for the recently aroused concern belongs to traffic engineers who have done a good job in cities here and there by showing the scope of the problem, and the remedies needed.

Today, opportunity is knocking loudly at the door of those traffic engineers where the parking problem has not passed the discussion stage. Certainly, the traffic engineer has the responsibility and the right not only to participate in, but to assume leadership in the battle against the parking problem.

Armed with the only tools—research and study—that can bring permanent solutions, the traffic engineer can perform a service for his community which will pay dividends far into the future.

D. Grant Mickle

Director,
Institute of Traffic Engineers

Speed Zone Studies in Connecticut

by W. H. SHARP, *Engineer of Highway Control*
Connecticut State Highway Department

IN DECEMBER, 1945, the State Traffic Commission ordered that engineering studies for speed zones be made on approximately 3,000 miles of state-maintained highway. It is the intent that recommendations resulting from the engineering surveys should be approved and zones established and posted that will be considered reasonable and enforceable under the existing statutes.

Preliminary to the state-wide survey, a section of state highway was selected for immediate study, covering rural and suburban areas, so that methods and techniques could be developed that would be followed in the state-wide survey. The section selected was a two-lane highway carrying moderate heavy traffic a distance of 12 miles.

Our initial step was a reconnaissance survey of the entire route to be studied to establish survey stations where it appeared that traffic assumed a constant rate of speed on long tangents and at critical points where it was obvious that speeds would be reduced, such as approach to curves and intersections, or thickly populated areas.

Initial Speed Checks

Speed checks were taken at the designated survey stations to record separately the speed of vehicles traveling in each direction. These speed

Car containing the speed meter is placed to attract a minimum of attention.

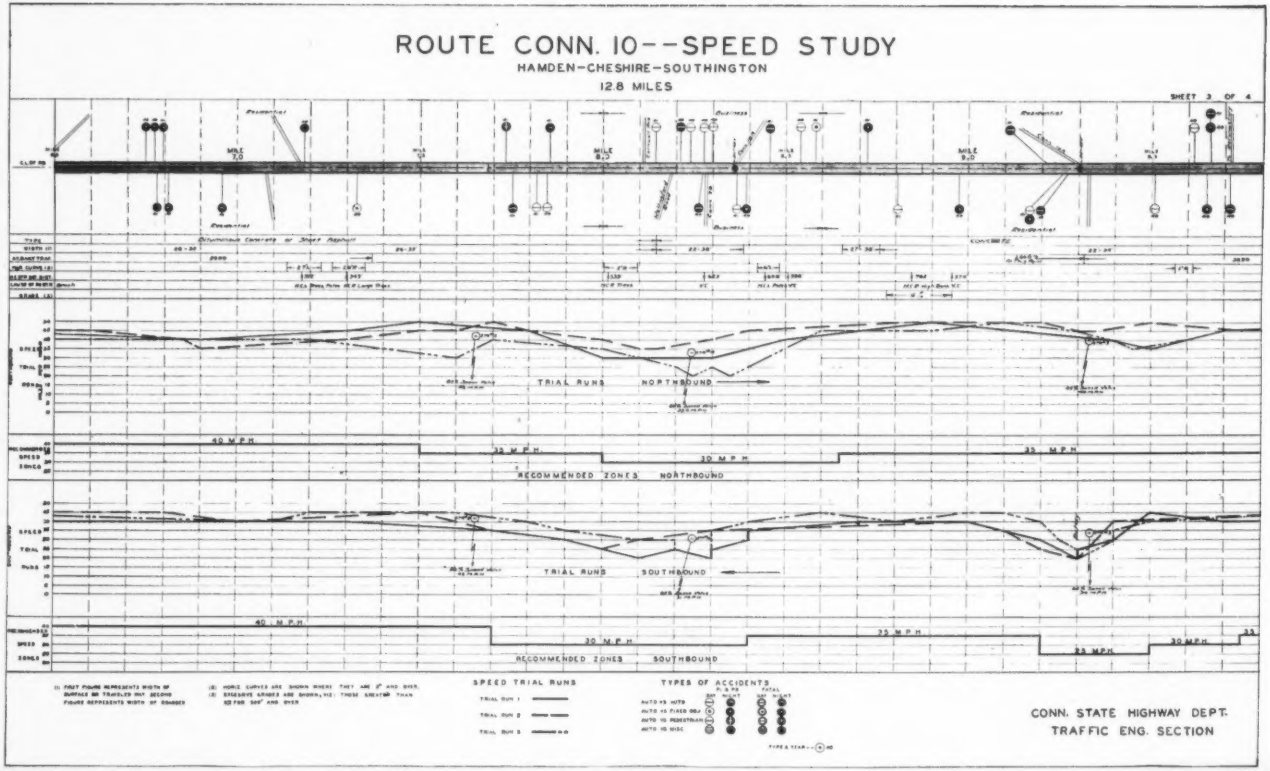
Speed Timer in position for reading.

checks were conducted by a field party of two men consisting of an observer and recorder. Equipment used was a Springfield Electric Speed Timer which was actuated by vehicles passing over two lengths of ⅛" rubber hose crossing the pavement laid parallel, 14.67′ apart. Current for the electric clock was supplied by a storage battery from the car used by the field party.

The speed of not less than 200 vehicles in each direction was checked and recorded in the following classifications: Connecticut registered vehicles; male operator alone, male operator with passengers, female operator alone, female operator with passengers, trucks light or heavy, and buses. Vehicles bearing foreign registrations were recorded separately in similar classifications. In the office, the field charts were summarized. Average speed for each classification was computed and a cumulative curve of the speed of all vehicles was plotted. The curves and summaries were kept separate to indicate the conditions for the movement of traffic in each direction. The summary sheets were thoroughly analyzed to determine whether or not any particular group of vehicles traveled at a speed which would indicate a pertinent factor in recommending a reasonable speed zone.

Accidents Correlated

The accidents for the years 1940 and 1941 were analyzed and spotted on a straight-line diagram map. All accidents were analyzed to determine whether or not vehicle speeds may have been contributory to the accident cause. At several locations it was apparent that excessive speed was a causation factor. In the recommending of zones at these locations, the speed checks indicated that the maxi-


ROUTE CONN. 10--SPEED STUDY
HAMDEN-CHESHIRE-SOUTHINGTON
12.8 MILES
SHEET 3 OF 4
TRIAL RUNS NORTHBOUND
40 M.P.H.
30 M.P.H.
30 M.P.H.
35 M.P.H.
RECOMMENDED ZONES NORTHBOUND
TRIAL RUNS SOUTHBOUND
40 M.P.H.
30 M.P.H.
35 M.P.H.
25 M.P.H.
30 M.P.H.
RECOMMENDED ZONES SOUTHBOUND
SPEED TRIAL RUNS
TRIAL RUN 1
TRIAL RUN 2
TRIAL RUN 3
TYPES OF ACCIDENTS
AUTO VS AUTO
AUTO VS FIXED OBJ.
AUTO VS PEDESTRIAN
AUTO VS MISC.
CONN. STATE HIGHWAY DEPT.
TRAFFIC ENG. SECTION

mum operating speed was excessive and that speeds should be posted lower than the 85 percentile value.

The roadway alignment and gradient were carefully studied so that speeds could be recommended that would conform to the policies concerning non-passing sight distances and passing sight distances. Horizontal curvatures were surveyed to determine the maximum safe speed. These speeds were computed and later checked by the use of a Ballbank Indicator. This section of highway is prescribed as a through route and all vehicles entering it are required to come to a full stop so that sight line restrictions to vehicles on side roads do not have to be considered. However, the sight lines from the intersection to both directions on the through route were checked so that the speed would be set to allow a safe stopping distance for vehicles traveling on the state highways.

Speed Profiles Studied

Trial runs were traveled, three in each direction for the entire distance. A different driver operated the vehicle on each test and floated with the traffic. The fluctuation of speed was recorded; and speed changes in increments of 5 miles per hour and the mileage reading at the speed change were also recorded. At each speed change the reason for variance was recorded. A record of the trial runs was plotted below the straight-line diagram to produce a profile indicating the speed differential and the locations where the speeds changed. A line for each of the three runs was plotted on the profile so that it became immediately apparent where the speed zones should vary.

The character and density of traffic were taken into consideration to determine what may be considered normal. It was felt that possibly heavy volumes of truck traffic or peak periods of traffic flow would have direct bearing on recommending speed zones that may be considered reasonable for all times. In recommending the reasonable speed zones, the results of our speed checks were compared with our trial runs and computed speeds for curves and also checked against the locations where non-passing sight distances were below minimum.

Recommended Zones

On a profile immediately beneath our trial run profile, the recommended speed zone was plotted and where changes in speeds were to be recommended, it was done in increments of 5 miles per hour. It was evident in most cases the speed of the recommended zone followed the general pattern of the trial runs, excepting at certain points where it had been discovered that due to inadequate sight distances or high accident location, the estimated safe speed was lower than that which the majority of vehicles were traveling. The speed zoning for each location was considered separately. It was often the case that vehicles traveling in one direction were required to reduce speeds at certain points while traffic in the opposite direction was not. This was the case at one intersection where because of channelization southbound vehicles must make a reverse curve while northbound vehicles continue through on a tangent. At this particular point, it was found that southbound vehicles could not make this maneuver at a speed greater than 25 miles per hour. The speed approaching the intersection had been set at 40 miles per hour and to make the reduction of 15 miles per hour in three 5-mile-per-hour increments, it required a reduction ¾ mile in advance of the intersection. These 5-mile-per-hour reductions were posted at ¼ mile intervals.

A policy was adopted to recommend a speed zone which was not more than

5 miles per hour under the 85 percentile value indicated except at those locations where contributing elements dictated otherwise. This recommendation remained generally true provided that the 85 percentile value compared favorably with our trial runs, nonpassing sight distances, passing sight distances, and estimated safe speed. On curves where it was evident that the 85 percentile value did not compare favorably, an appropriate figure was recommended in accordance with the pertinent factors.

The recommended speed zones of 5-miles per hour lower than the 85 percentile value is due to the tolerance of approximately 5 miles per hour allowed by the enforcement officers who do not attempt to enforce an absolute limit because of the Connecticut prima facie speed law.

It is felt that the speed zones as recommended may be considered reasonable under normal conditions and that through careful study we have determined the limitations that are imposed by physical and traffic conditions. It is assumed that the individual motorist will be required to reduce speed further for unfavorable weather conditions, for poor visibility, for all traffic volumes which may be beyond normal.

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NEW LAWS WILL HELP BOSTON'S PARKING PROBLEM

"Greater Boston Needs Action," headlined a recent printed bulletin widely distributed in the Hub City by the Greater Boston Development Committee, and it got action. The state legislature has passed and the governor has signed enabling legislation which will enable Boston to make an all-out attack on the parking problem.

One measure permits the city to borrow $5,000,000 outside its debt limit to acquire sites and construct off-street parking lots or garages for operation by the highest private enterprise bidders. Maximum parking fees will be determined by the city.

Another bill authorizes the city to permit private operators to construct and operate a parking garage under Boston Common. Public funds would not be involved in this enterprise.

In urging those far-reaching steps the Greater Boston Development Committee declared, "Boston is recognized as one of the worst traffic snarls in the country. Nearly half of the present street areas are blocked by parked cars."

Altogether, the Committee reported, Boston needs 6,700 off-street parking accommodations to adequately serve the six areas known as the retail, financial, market, government, shoe and clothing, and electrical and wool districts.

The parking program will serve those areas and will be integrated with the projected express highway known as Central Artery which will cut directly through or near most of the principal traffic destinations.

Central Artery is expected to relieve existing streets of more than 50,000 vehicles daily. That modern non-stop highway plus the planned adjacent parking facilities would entirely eliminate large volumes of traffic and parked cars now cluttering downtown streets.

—Automotive Safety Foundation

A New Pattern for National Highway Development

by THOMAS H. MACDONALD, *Hon. Member, Institute of Traffic Engineers*
U. S. Commissioner of Public Roads

The pattern of our new highway program was set by the Federal-Aid Highway Act of 1944, which authorized a Federal appropriation of $500,000,000 in each of the three fiscal years following the end of the war, to assist the States in constructing highways designed to meet modern traffic requirements. It is a pattern that recognizes the essential functions of the principal classes of our roads and streets, and provides in reasonable proportion for the improvement of each class.

For primary highways included in the 232,000-mile Federal-aid system it authorizes annual appropriations of $225,000,000; for the improvement of Federal-aid routes in urban areas it earmarks $125,000,000 annually; and for the development of a Federal-aid system of secondary roads in each State it authorizes appropriations of $150,000,000 to be made for each of the three years.

Since the Federal funds generally are matched in equal amount by the States, the legislation made it possible for the States to undertake a three-billion-dollar highway program, with Federal assistance, in addition to work that will be financed with State and local funds.

Thus, there is a well defined program for highway improvement to be effected where improvement is most needed and a definite promise of liberal financial support for carrying out the program. But, at the moment the highway building industry finds itself in much the same position as the motor vehicle industry as to prospects of early substantial production. It is not dollars or demand for its product that are lacking, but materials, labor and equipment. Progress of the highway program is dependent upon industrial production and conditions in the labor market. The prevailing uncertainty among highway officials and highway contractors concerning the quantity of materials and labor that may be available in the months ahead has delayed the start of construction on many large projects requiring scarce materials, such as steel, structural concrete and lumber for concrete forms.

Facts on Current Projects Plans

As of May 11, plans were ready for contracts involving work estimated to cost 864 million dollars. Plans are rapidly maturing for projects estimated to cost 2.6 billion dollars. The immediate approach to the letting of contracts invariably is conservative.

The mileage of projects approved for immediate contract offerings, plus the mileage advertised for lettings, plus contracts awarded, totals 9,400 miles of road work that will be completed at a cost of approximately one-half billion dollars. This approaches the average prewar annual Federal-aid program measured by mileage, but it is highly doubtful if more than 50 per cent of this total will be placed under contract in the next six months, because of the limitations I have mentioned.

However, despite the difficulties of the present situation, I have complete confidence in the future of highway

development under the new program, and I appeal to the representatives of the automotive industry and other industrial interests of this automotive capital of the world for their equal faith and confidence. We shall have to live in that faith and confidence for a year or so, but as soon as the present handicaps are overcome, your trust now reposed in your roadbuilders will prove, I am sure, to have been fully justified. My own confidence in the ultimate success of the program is rooted to the fact that highway officials at all levels of government—State, municipal, county, and Federal—know now exactly where they are going and why. Generally they have learned the why before determining the where; but the answers to both questions they have found by careful studies begun years ago.

Origin of P.R.A. Traffic Surveys

It was a question propounded by one of the chief executives of the automotive industry that started us on our studies. It was when the tax on gasoline was first advocated, and his question was: "What will be the impact upon the road user should the highway improvement program come to be financed largely from revenues derived from this source?"

At that time we had no answer, but we recognized that the costs that road users would be called upon to pay might easily become a ruling factor in the growth of highway transport, so we thought it important to try to find the answer. So, in 1922, we began our first traffic survey with the cooperation of the State Highway Department of Connecticut.

We didn't know exactly how to proceed; but, in a general way we thought it would be possible to start with a knowledge of the state of the highways, and by measuring their usage, determine the adequacy of the existing improvements and their probable life, and proceed from that to an estimate of the future cost of replacements and essential extensions of the improvement. Unfortunately there were two unknowns that at that time we found it difficult to evaluate with any degree of certainty. One was the probable future growth of motor vehicle use; the other was the kind and cost of highways that would be required to serve any estimated volume of traffic. Highway transport was then in its infancy. We now know that our assumptions on these two points were much too conservative and the conclusions of our study were correspondingly inaccurate.

But we didn't stop with our first survey. We went on to other studies, in one State after another, and finally, with accumulating experience and improved techniques we found we could arrive at dependable answers to most of our problems. So, in 1934, twelve years after our first effort, on the recommendation of Public Roads, there was written into the Federal highway legislation a requirement that one and a half per cent of the Federal-aid construction funds, as these were made available, should be expended for studies and research leading to advance planning.

Organization of State Planning Surveys

This innovation resulted in the organization of a unit in every State highway department to carry on what we designated as "State-wide planning surveys." Thus was begun a nation-wide effort to determine the current status of road improvement and usage. State after State adopted the survey method as an administrative tool. Not every State has yet fully recognized the value of this approach to the estimation of future highway needs, but all States have created units in their highway departments to carry on some program of economic research, and the more experienced the administrators of the State highway departments, the more efficient this particular unit

of their administative organization has become.

The general surveys and special studies that have grown out of the initial program are characterized by the purpose to evaluate economic significance of a road system. This is a departure from our earlier conception of research as applying only to studies of physical materials, and design and construction methods. The basic idea of the surveys is that by study of the use that is made of existing highways —the nature and extent of that use— we can find the best guides to the improvements desired by the public. This is the antithesis of another type of planning which first designs a facility and then hopes to regiment the public to its use. In other words, we are endeavoring to tailor roads to meet the needs of the traffic and not to tailor the traffic to meet the needs of the roads.

Perhaps that sounds like a generalization, but by a few examples I can illustrate some of the principles of traffic behavior which we have learned from our surveys, and which, in their application, set the pattern for our development of the highways.

One Per Cent Will Carry 20 Per Cent

One of the facts we have learned is that traffic converges on principal routes. Thus, the proposed interstate system of highways, consisting of our principal traffic arteries, will comprise only about one per cent of the total rural road mileage but will serve about 20 per cent of the rural vehicle mileage. All arterial routes in rural areas, including Federal-aid highways and primary State systems, comprise only about 12 per cent of the rural mileage but serve about 72 per cent of the rural vehicle mileage. Other roads which feed these arterials have 88 per cent of the rural mileage, but only 28 per cent of the vehicle mileage.

In cities, also, traffic tends to converge on arterial streets. But since the existing streets generally are inadquate to carry the accumulated movement some traffic dispersion results. Because of this inadequacy, the ordinary city arterial street seldom carries more than 25,000 vehicles per day. Where expressways of ample design are provided, however, traffic concentrates on them and volumes sometimes exceed 75,000 vehicles per day. For example, one section of the Lake Shore Drive in Chicago carried an average of 86,000 vehicles per day in 1936.

By-Passes Are Seldom Needed

Another significant fact revealed by the traffic surveys is that the drivers of most vehicles approaching a city want to go into, and not around, the city. Of traffic approaching cities of over 500,000 population, only about six per cent is destined to points beyond the city; 94 per cent is headed for the city. You can readily see what a shock that was to all of us who originally thought we could solve the problem of traffic congestion in cities simply by building by-passes.

A relatively high percentage of traffic converging on small cities also has the city as its destination. The surveys have shown that only 41 per cent of the drivers approaching small cities want to go around. So, you see, the city or town is the point of destination for most of the traffic on our highways, and we cannot eliminate congestion on city streets by building by-passes; we have to carry traffic into the cities.

Belt Lines Needed

In cities, we have learned, there is inevitable conflict between the needs of local and through traffic which makes it impossible to serve well both classes of traffic with the same facilities. This determined fact is the basis for the fast multiplying plans for express highways. It is basic also to proper solutions of the parking prob-

lem, and explains particularly the need for belt lines around the business sections of cities to attract and remove from the congested business streets a large volume of through traffic which has no destination in the central area.

In three cities where parking surveys have been made we have found that a large proportion of traffic in the central business district is only passing through the district and has no desire to stop there. In Baltimore, a city of 860,000 persons, the volume of "through" traffic was 58 per cent. In Providence, a city of 254,000 population, the volume was 48 per cent, and in Pawtucket, a city adjacent to Providence and perhaps influenced to a large extent by Providence, "through" traffic amounted to 58 per cent.

In other words, a lot of congestion in downtown business centers is due to the fact that our antiquated street system still leads traffic to the downtown district and does not permit it to go around. The only way we can prevent drivers from going through the business district is by providing superior facilities in the form of an interior circulation system around the center of the city.

Parking Requirements Need Study

In this connection, I'd like to state that there is a great need for a careful study of parking requirements in most of our cities. We have found that in some sections of a city there may be an excess of parking accommodations, while in other sections the available parking space is overloaded. A parking survey in the central business district of Baltimore showed that during the peak hour of parking, from 1 to 2 P.M., 95 per cent of the 12,310 spaces available for parking at the curb and off the street were used. This was found to be the situation in the area as a whole. When different sections of the area were considered, however, somewhat different relations were found to exist. In the northwest section, where retail shopping is dominant, the number of cars parked represented 110 per cent of the number of parking spaces. This was made possible by crowding vehicles into the aisles in parking lots and garages and by a large turnover in the number of vehicles parked at the curb within the hour period. In another section of the city, largely a wholesale district, the number of cars parked during the peak hour was only 74 per cent of the number of parking spaces. It is apparent that the space that has been provided is not adjusted to the need for space.

Facts on Traffic Trends

Traffic volume, as we have studied it, has trended constantly upward. During the 20-year period from 1921 to 1941 the number of vehicles registered in the United States increased more than threefold — from 10½ million in 1921 to nearly 35 million in 1941. During the same period the total annual mileage of travel by motor vehicles increased slightly more than sixfold — from 55 billion vehicle miles in 1921 to 334 billion in 1941.

This remarkable increase was brought about by a steady rise in the average volume of travel per motor vehicle. The average annual mileage of motor vehicles in 1921 is estimated at 5,230 miles. By 1931 this average had risen to 8,330 miles, and in 1941 it was approximately 9,570 miles per year. In 1943, when gasoline rationing and other wartime travel restrictions were in effect, traffic volumes were 42 per cent below the 1941 level, but by January 1946, the volumes had again increased to a point slightly above the 1941 level.

Motor Vehicle Is a Short Haul Vehicle

The use of highways is preponderantly for short trips. This was demonstrated by an analysis made in 1939 of the travel characteristics of passen-

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ger cars and trucks in 11 States, with particular attention to the length of trips that extended beyond city limits or were entirely rural in character.

We found that 38 per cent of all trips made by passenger cars were less than five miles in length. Trips of less than 10 miles accounted for 65 per cent of the total number, and 94 per cent of all motor trips were less than 40 miles in length. Trips of 100 miles or more accounted for only 1.5 per cent of the total number.

In terms of miles traveled, rather than number of trips, 41 per cent of the mileage of passenger cars was accounted for by trips of less than 20 miles; 59 per cent by trips of less than 40 miles; and 77 per cent by trips of less than 100 miles.

The range of truck travel is somewhat greater than that of passenger cars. In the 1939 survey it was found that 34 per cent of the trips made by trucks were less than 5 miles in length; 80 per cent were less than 20 miles; and 98 per cent were less than 100 miles.

These figures may be changed somewhat in the future, but actually the motor vehicle is a short-haul vehicle, and the area of conflict with other forms of transportation is very small.

Speed Trends

Now, as to speed. The average speed of motor travel shows an upward trend. Speeds on rural highways immediately prior to the war averaged 47.1 miles per hour. During the war period when the 35-mile speed limit was in effect, the average speed on rural highways dropped to 36.4 miles per hour, but in recent months has returned to an average of 45.5 miles per hour, which is only slightly lower than the pre-war average. Top speeds of 70 to 80 miles per hour, however, have not shown any tendency to increase since 1934.

We believe that, with the development of urban expressways and controled-access highways which will eliminate delays now caused by traffic signals at frequent intersections, drivers will be content to maintain a reasonable average speed to reach their destinations, whether they are going from the suburbs into the city, or from city to city. When it is possible for drivers to enjoy the free use of main highways, without having to stop for cross-traffic, we will have provided a utility that will be much safer to use, since it will encourage a normal driving speed that is within the capacity of the average individual. That, certainly, was a characteristic of the driving speed upon the German *autobahnen* prior to the war. People did not need to drive at a speed of more than 50 to 55 miles an hour to make as fast time as most of them wished to make from city to city.

Designing for Peak Loads

Traffic piles up in peak loads on the highways. That, as a generalization is a widely known fact, but our surveys have told us much about the magnitude and frequency of the peaks. Good highway design should accommodate nearly all peak loads and allow for future traffic increases, but it cannot economically allow for the maximum traffic load that is likely to occur during the life of a facility.

Safer highways demand improved design standards. In the early stages of highway design, a 500-foot sight distance was considered adequate to meet the demands of the low-speed, low-volume traffic that utilized the highways at that time. Design criteria today require continuous unobstructed vision for 600 feet for safe stopping at speeds of 70 miles an hour. In addition, sight distances up to 2,600 feet are required at frequent intervals for safe passing on high-speed highways. These standards are essential to

improve the efficiency and reduce the hazards of traffic flow.

The bulk of our highway system is composed of two-lane, two-way traffic. If fast-moving traffic cannot overtake and pass slow-moving vehicles safely because of insufficient sight-distance, the road becomes inefficient. If passing is accomplished where sight-distance is restricted, hazards are introduced. The provision of adequate sight-distance for high-speed traffic requires limitations in gradient and curvature.

Rural highways with hourly traffic volumes exceeding 800 vehicles require two traffic lanes for each direction of travel. It is essential to provide a sufficient number of lanes for the estimated traffic demand on high volume facilities. Design standards must contribute materially to the efficiency of motor vehicle operation, and only by providing sufficient sight-distance and traffic lanes can hazards be reduced and efficiency increased.

These findings, obtained through long years of research, are indicative of the background of established fact that is now determining what we should do in the future.

The facts revealed by traffic surveys and planning studies give a clearer understanding of some of the highway problems we hope to solve in the near future. The Federal-aid program, as it has recently been authorized by Congress, is patterned along lines indicated by our studies as most likely to provide an effective solution. It is a road building program. It is not an unemployment program. The purpose of the legislation is to aid in the development of our highways in a manner commensurate with modern traffic requirements. I repeat, it is not an employment program and it is not a program than can be deferred until there is a need to offer relief employment in the way of public works. The need exists today, and only the lack of labor and materials, together with other exigencies which I have mentioned, offer any reason for delaying the program.

(Taken from an address made before the Economic Club of Detroit, Michigan.)

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TRAFFIC DEATH SCORE

The nation's traffic death toll for the first five months of this year was 13,240—an increase of 43 per cent over the same period last year, the National Safety Council announced today.

May deaths totaled 2,410. While this is 36 per cent more than in May, 1945, it is 21 per cent below the same month in 1941.

The Council believes the May drop from 1941 is significant, since it is the first major break in the upward trend of the traffic toll which has been running neck-and-neck with the record-setting year of 1941. February was the best previous month, when deaths fell 7 per cent short of the 1941 level.

"The May figures offer hope that the nationwide traffic safety program which was stepped up early in May with the President's Highway Safety Conference has succeeded in awakening many Americans to the high price of carelessness on the highway," said Ned H. Dearborn, president of the Council.

A Strictly Modern Lighting System Economically Planned

by T. J. SEBURN, *(President, I.T.E.)*
Traffic Engineer, Kansas City, Mo.

IN JANUARY 1943, by executive order of the Director of Public Works of Kansas City, Mo., the Traffic Engineering Division assumed the responsibility for the street lighting program. This was later confirmed by action of the City Council in which street lighting was added to the duties of the Traffic Engineer.

Kansas City with a population of 450,000 persons is the principal city in a metropolitan area of almost three-quarters of a million. The city has a street system of approximately 750 miles including all residential streets and boulevards. All of the lighting in the city, with the exception of one section of almost a mile, is composed of old-style equipment using many radial wave lights and almost one hundred miles of so-called brightway lighting that was installed 25 years ago. Consequently, this city presents a fertile field for a street lighting modernization program.

The street lights are owned and operated for the city on a contract basis by the Kansas City Power and Light Company, and rates for both new style and existing old style lights had been included in the contract at the time of a revision in 1940. However, it was the feeling of the city authorities that some adjustment should be made in these rates, and consequently, the task of planning a modernization program consisted of two major phases.

One of these was the actual planning of a system of lighting which would meet modern standards, and which we anticipate will help reduce night traffic accidents without speed reduction, and provide greater protection and convenience to pedestrians, stimulate retail trade, aid police in combating various forms of crime, and generally add to our civic pride and municipal advertising.

The second phase of the program consisted of renegotiating the contract in order to make it possible to adopt the modern lighting program after it was planned. These two phases were developed together as we felt knowing what we wanted to do in the way of street lighting would enable us to judge better the steps necessary to take in contract negotiation, and, conversely, contract stipulations would be a guide in determining what it was possible to do in the way of modernization. Little time will be spent in this article in dealing with the contract phase of the program. Suffice it to say that we found the company extremely willing to cooperate, and as a result, we believe we can provide good illumination throughout the city for approximately $722,000 a year, which is well within the recommended annual cost as submitted by the Illuminating Engineering Society.

Traffic Volume and Accident Toll Surveyed

First, the city was surveyed with regard to traffic volumes and accident experience, and a system of arteries set

up upon which it was proposed to install traffic safety lighting. This system of arteries comprised 163.9 miles and is shown in Figure I. The network of streets and boulevards shown in this figure compares very favorably with the traffic flow map of the city and also with the pattern set up by a special night accident spot map, which has been maintained in the Traffic Engineer's Office for several years. The balance of the 750 miles of the street system is scheduled to be relighted as non-traffic or residential streets. Further description of the lighting plan for these sections will be given later.

On the arteries to be relighted, the next step was to classify the streets by type of district — residential, retail business, or wholesale. From traffic volume information maintained over a period of years, the heaviest night hour of traffic movement was established for each section of this system. These were then classified as light, medium, heavy, etc., according to the criteria of the Joint Committee of the Institute of Traffic Engineers and the Illuminating Engineering Society.

The proposed illumination values established for each section are in accordance with the recommendations of the Illuminating Engineers. The number, size, and style of light was then established for each artery in order to provide most economically the degree of illumination required. In preparing this schedule, factors such as roadway width, pavement surface and texture, foliage conditions, etc., were considered in the preliminary layout. The light patterns of the various luminaires were applied to these conditions and in this manner, the proposed mounting height, spacing, and lamp size were determined. All of this work was done in preliminary form for the entire system of arteries to be relighted, and the relighting program set up for anticipated completion over a five-year period.

In attempting to select priority of installation for the traffic safety lighting, further analysis of the night fatalities was made. Figure II will serve as a reference in a discussion of this phase of the program. All night traffic fatalities over the five-year period from 1940 to 1944 inclusive were spotted on a map of the city, and it was found that of the 106 night fatal accidents in this period, all but five occurred on the system of approximately 164 miles shown in Figure I.

These sections of streets having two or more fatal accidents in the five-year period accounted for 89 of the total night fatalities on approximately 40 miles of the street system. Therefore, it was obvious that the biggest saving in life, and consequently the most urgent sections to be relighted were included in this system of 40 miles, and these were immediately given first priority. In order to provide a more complete system of arteries, a few gaps were filled, increasing the total to 44.1 miles as shown in solid black lines on Figure III.

Modern Equipment at Lower Cost

Further examination showed that there were approximately 5.6 miles of streets where the night accident situation was good, and although sections were fairly well lighted with old style fixtures by virtue of the number of these luminaires used, it was found that equivalent or better lighting could be provided on these streets with modern equipment at less cost than under the present arrangement. These were also added to the first phase of the traffic safety lighting part of the program. This made a total of 49.7 miles of traffic safety lighting which was recommended to be installed as soon as new equipment can be obtained from the manufacturers. The program was submitted to the Finance

and Public Utilities Committees of the City Council and approved by those Committees for installation in the first year.

Detailed strip maps have been prepared for nearly all of these sections, and orders written to the utility company and accepted by that company for installation as soon as equipment is received. These maps show the exact location, mounting height, bracket length, luminaire style, lamp size, and all required features to provide the lighting desired.

Thus, it is seen that the ability of the manufacturers to produce and deliver street lighting equipment will be the only thing that keeps Kansas City from being well on its way to completion over a five-year period, a program of traffic safety lighting.

Residential Lighting

Next is the matter of improving and modernizing the lighting in residential areas. There are three principal parts in this phase of the program.

First, our studies have indicated that there are approximately 250 residential intersections where there is no light whatever at present.

Second, Kansas City has approximately 1,700 gas lights that should be replaced with electric lights.

Third is the matter of replacing existing lights with modern equipment in order to provide better illumination.

In general, the residential and light-traffic street system in Kansas City is composed of rectangular blocks 330 feet by 660 feet, and it is proposed to provide modern luminaires eventually at each residential intersection with an additional luminaire at the mid-block point on the long blocks. This will mean a spacing in these areas varying from 300 to 350 feet. The use of modern luminaires of the refractor type giving equilateral distribution of light mounted on long brackets placing them more nearly over the middle of the roadway, should give the required illumination for these residential areas.

Our first step, then, is the installation of this new type of luminaire at the 250 locations now without light.

Next will be the replacement of existing gas lights. As indicated above, there are 1,700 of these and of this number the big majority are so located that two or more gas lights can be replaced with one electric light to give more illumination on the street. This is true at 497 locations comprising a total of 1,124 gas lights and at all of these points the two gas lights cost more per year than the one proposed electric light. Therefore, in addition to improving the lighting, the annual cost to the city will be reduced by about approximately $3,000. These installations and those for the 250 residential intersections already mentioned have been approved by the City Council's Finance and Public Utilities Committees for immediate installation as soon as equipment is available.

The final step in our modernization program is the replacement of all the remaining residential lights with modern equipment, and this work we anticipate will be completed in a five-year program.

The net result will be as follows:

We will replace a total of slightly over 15,000 electric and gas lights with approximately 13,500 electric lights. Where we now have several thousand 250-candlepower lights, we will use nothing less than 400-candlepower and many of the 1,000- and 1,500-candlepower sizes. We are now delivering eleven and one-half million effective lumens of light to the streets of Kansas City at a total cost of $552,000 per year, or $47.53 per thousand effective lumens. Our proposed system will deliver 49 million effective lumens on the streets at a total cost of $722,000 per year, or a

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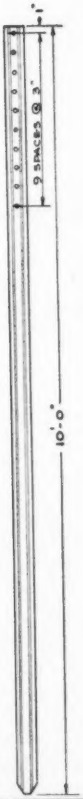

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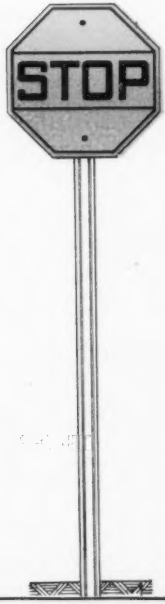

The Hunt Company, 3700 W. Six Mile Road, Detroit 21, Mich.

cost of $14.75 per thousand effective lumens.

This entire program is based upon meeting the recommended practice of the Illuminating Engineering Society for each street, and the system has been so designed that where less than one foot-candle of light is provided, we will be able to increase the lighting to one foot-candle by merely changing the size lamp used in the luminaire. — *Reprinted from American City Magazine.*

Limited-Access Highway Begun by Virginia

RECENTLY the Virginia Department of Highways awarded a $546,000 contract for the grading and construction of the small drainage structures for a 14.6 mi. four-lane limited-access highway extending southwestward from the Washington, D. C., area. The road will be the first controlled-access highway built by the department and the start of the project launches a huge post-war road program planned for Virginia.

The expressway has been named the Shirley Memorial Highway in honor of the late Henry G. Shirley, who died in 1943 after serving 22 years as highway commissioner of Virginia. During the war the Public Roads Administration completed the northern 2.2 mi. of the highway at a cost of $1,660,000. The state highway department has now begun work to extend the road 14.65 additional miles to Occoquan Creek.

Two 24-ft. wide reinforced concrete pavements are planned. Later, if desired, one additional lane each way can be added on the first 5 mi. at the Washington end. The slabs will be made 10 in. thick in anticipation of extensive truck traffic. They will be separated by a grassed median strip varying from 14 to 70 ft. in width, this wide median being possible because the minimum width of the right-of-way is 300 ft.

New Road Has Low Grades

Maximum grade on the new road will be 3.5 per cent uphill and 4.2 per cent downhill in the direction of travel. The maximum curve will be 1 deg. 15 min. Because of this excellent alignment, plus the limited access feature, the new road is expected to provide a much better route for the extensive traffic now using existing routes, where long sustained grades of as much as 7 per cent are encountered and traffic is not divided. Moreover, the new road bypasses the city of Alexandria.

From the south end of the project onward to Richmond a four-lane highway is available.

Two Types of Interchanges

To control access to the expressway, service roads parallel to the highway will be built in areas where considerable development is expected. Where access is required, traffic interchanges of a type to avoid left-hand turns are planned. On the section already completed an unusual bridged rotary interchange was built on the section already completed; which is believed to be the first of its type in the country. During more than a year of service it has functioned satisfactorily.

The work now underway calls for two types of interchanges. At two points, complete four-quadrant cloverleafs (Fig. 2) will be constructed. For five other locations two-ramp interchanges or partial cloverleafs of the type illustrated by Fig. 3 are planned. Three overpasses, one underpass and

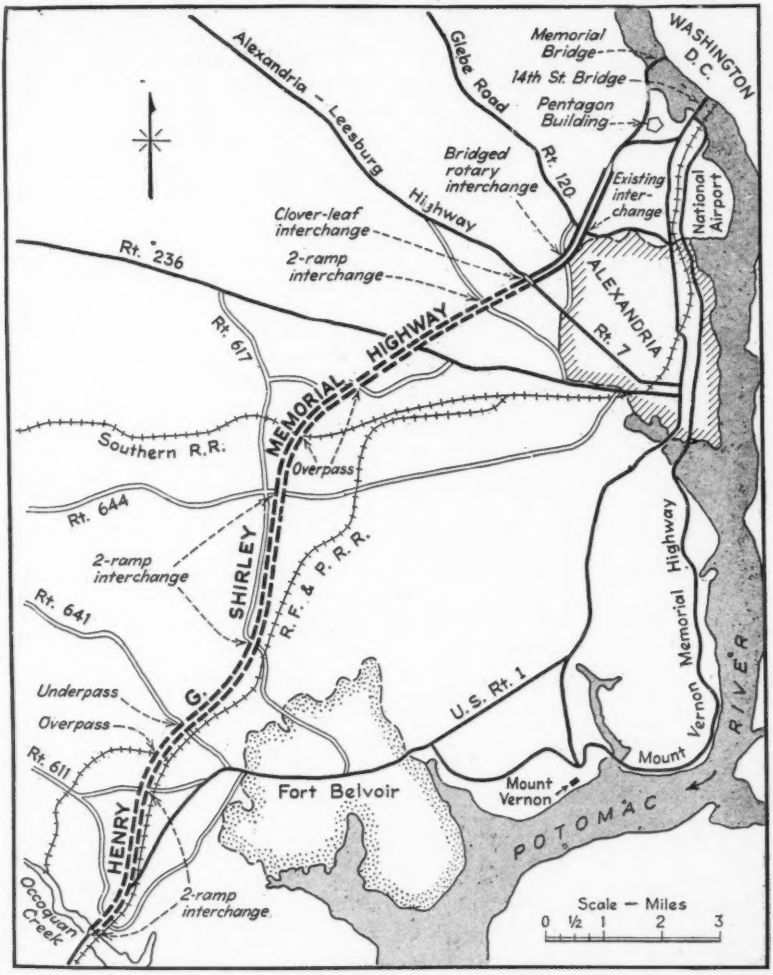

Fig. 1. Nearly 17 mi. long, the limited access highway will provide a much better route for traffic between Washington and Richmond, the city of Alexandria being by-passed. Heavy solid parallel lines show completed section and dotted lines indicate work now underway.

five bridges over streams will also be required.

Design Speed Is 70 m.p.h.

The highway proper is designed for a speed of 70 m.p.h. and the exits and entrances for about 50 m.p.h., long accelerating and decelerating lanes being used. The ramps of the interchanges, which have a minimum radius

of 80 ft. measured to the inner edge of the pavement are designed for a speed of 25 m.p.h.

The layout of the highway is characterized as a "spline-line" design, being made up almost entirely of compound curves with only a few hundred feet of tangent. By making the greater length of the highway gradual curves, the location was best fitted to the hilly terrain traversed and the desired flat profile obtained. The curved layout will also reduce to a minimum glare at night from the headlights of opposing traffic and will avoid the monotony of long tangents.

Interchanges Placed on Curves

Another interesting feature of the layout is the location of all traffic interchanges on or near curves. This design permitted gradual transition in the median to meet the reduced width desired at some bridges. As a result, there will not be the "squeezing" effect that would have occurred if the approaches to the structures had been tangents.

The median strip will be depressed and grassed. Drainage of the strip will be by drop inlets spaced about 500 ft. apart. The outer shoulders will be sloped away from the pavement in cuts as well as in fills, and the gutters in both the median strip and those beyond the outside shoulders will be paved if they are built to a slope of three per cent or greater. The centerline of the outer gutters will be placed 19 ft. beyond the edge of the pavement.

Engineers and Contractors

The grading contract was awarded to Nello L. Teer Co., Fayetteville,

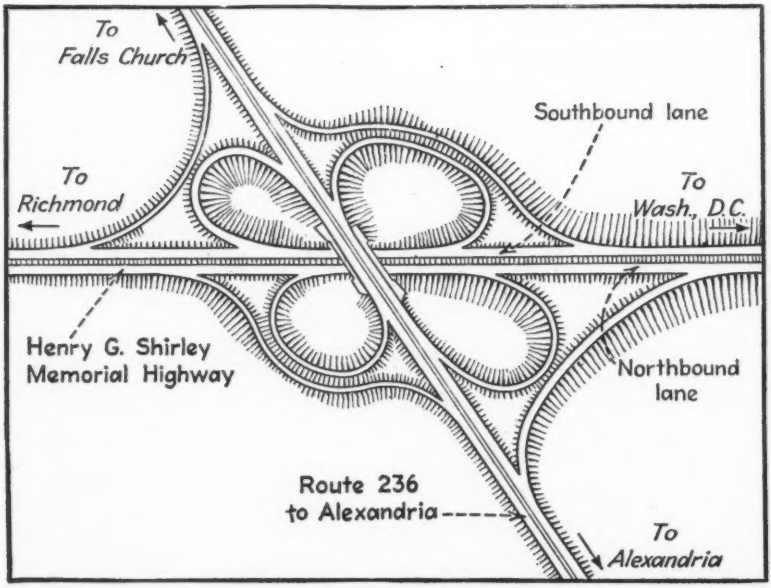

Fig. 2. Where the expressway intersects Route 236 a complete cloverleaf will be constructed to eliminate the need for left-hand turns for traffic traveling from one highway to the other.

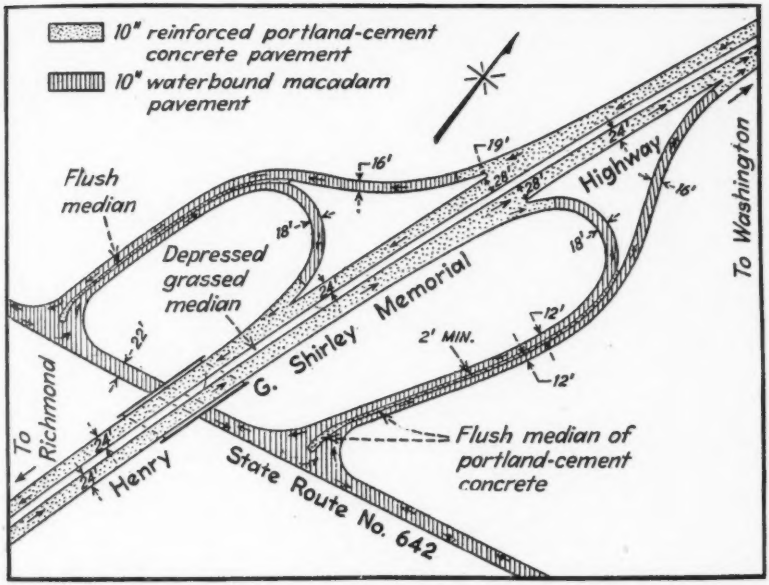

Fig. 3. At five locations, 2-ramp interchanges eliminating the need for left-hand turns on the expressway with only minor traffic interference on the secondary route are planned. Later, if traffic warrants, the interchange can be made a complete cloverleaf.

N. C., and it is to be completed by the fall of 1946. The work is being done as a federal-aid project.

For the highway department C. S. Mullen is chief engineer and A. H. Bell location and design engineer. Gilmore D. Clarke, New York, was consultant on the architectural treatment of the bridges.

—*Engineering News-Record*

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OCTOBER 3, 4, 5

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MIAMI BEACH INSTALLS METERS IN LOTS

Miami Beach, whose population in a single year varies from 30,000 to 100,000, is tackling her unique parking problem in a unique way.

Resting entirely on built-up land, of limited quantity, and surrounded by water, Miami Beach's land costs are high. Nevertheless, the city is well on the way to consummating an ambitious parking program which will cost the city little and which will bear lightly on parkers as they pay their daily, monthly or seasonal fees.

The parking program, fostered by Captain J. L. Hoover, traffic inspector of the Miami Beach Police Department, centers around the parking meter. Instead of paying attendants in the city parking lots, you feed the meters, some of which are adjusted for multi-coin operation. In the one large lot now in service, parkers in the rows nearest the stores pay five cents for 60 minutes. In more distant locations five cents buys 90 minutes of parking time. In spaces farther away, 25 cents provides all day parking.

The meter plan, however, is supplemented by parking permits. During the tourist season (October through April), monthly parking tickets, for lots only, may be purchased for $3 per month. For the remainder of the year, the charge is $3.

The Long Range Plan

The long-range plan calls for 16 municipal parking lots located to serve

This is the first of 16 municipal parking lots which are to make Miami Beach more pleasant for shoppers, visitors and workers. Four more lots will be in operation within the next few months. All parking spaces are equipped with meters—you can pay in advance for parking from one hour to all day. This lot is located between Washington and Meridian Avenues just north of Lincoln Road.

shopping areas, recreation areas and hotels. The present lot along Lincoln Road, opened last December, holds 368 cars, soon will expand to 960. By November four more lots will be in operation. Ultimate capacity of the series of lots will be 3,200 to 3,600 cars.

The program is self-liquidating, with earnings from the meters and permits turned back into parking lot expansion and traffic regulation. Eventually, the plan calls for reduction of parking rates as capital investments are covered. To start the program, the city appropriated $50,000, and later issued revenue bonds to provide $300,000 of additional capital. The site of the first lot came out of an abandoned city golf course. Other lots will be carved out of portions of city parks, as can be done in a city where beaches are plentiful. Recently the city purchased nearly four acres for one of the lots to be developed this year.

Parking Attendants Provided

Something new will be added for the 1946-47 touring season. Booths will be established every two blocks along Lincoln Road and at some locations along Washington Avenue where motorists may leave their cars with attendants. Later, parkers may call for their cars at any of the booths. With the aid of an intercommunication system, the cars will be delivered promptly. Fees for this service will be kept low.

Miami Beach officials believe that their parking program was launched in the nick of time. Before the war only 18 per cent of the hotel guests brought their cars. During the recent season, 44 per cent came by car. Because of the shortage of "home" cars, traffic has been only 80 per cent of the pre-war volume, but next year Miami Beach expects traffic to exceed all records by 15 per cent.

After several months' trial, both the general public and merchants approve the program. "But," says Captain Hoover, "it took six years of selling to get it started."

This article supplied through the courtesy of the Automotive Safety Foundation, Tower Building, Washington, D. C.

★ ★ ★

N. Y. U. BEGINS RESEARCH INTO AVIATION SAFETY

The Center for Safety Education at New York University announces it has just received a $1,500 grant from the American Museum of Safety for a fellowship for ground safety in aviation.

The research will explore all problems in the operation of aircraft, other than the techniques of flight, which present hazards to personnel and equipment. Many of these hazards are peculiar to aviation and are found in servicing airplanes on ramps and aprons, in overhaul shops, in handling cargo, in hangar and in airport facility layouts, while others are created by ground traffic problems involving both aircraft and motor vehicles and in the handling of passengers.

The two fellowship holders are Walter T. Johnson, safety director of American Air Lines, and Gilbert F. Tyler, safety director of Pan-American Airways. The study is an effort to compile data on the known hazards that exist and to find possible solutions. It will aim to accentuate the more common causes of accidents resulting in injury to personnel and damage to equipment.

Officials of the major air lines, the American Museum of Safety, Civil Aeronautics Administration, National Safety Council, Aero Insurance Underwriters, New York University, the National Conservation Bureau, and the aviation editor of the N. Y. Herald Tribune made the selection of the fellowship recipients.

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1824 EAST SECOND STREET · WICHITA, KANSAS

FOREIGN ENGINEERS STUDY U. S. SYSTEM

Highway engineers of 19 countries recently completed a five weeks' Inter-American highway course in the National Academy of Science building in Washington, D. C., following up with a 2,000 mile study tour of the Middle Western States. The school and study tour were sponsored by the American Road Builders' Association, with the cooperation of the State Department, Office of Inter-American Affairs, Public Roads Administration, and Pan-American Highway Confederation.

Representative highway officials from 16 Latin-American republics, chosen from hundreds of applicants in all the countries, were those for whom the course was originally planned. The sessions were just beginning when 11 engineers from China, two from Egypt and one from India, in the United States on official study tours, asked and were granted permission to participate.

Directly refuting the great poet Kipling's belief that East and West could never meet, this highway training course has been described by Mr. Chih Tien-hsuan, a Chinese engineer student, as "the reconnaissance survey of international highways of goodwill".

Lecture Subjects Were Varied

A variety of subjects, carefully chosen to give a balanced search of all phases of the great road building science in which the United States so easily leads the world, comprised the agenda of lectures which were completed May 17. Experts from state highway departments, federal government agencies, municipalities, equipment and materials manufacturers and construction firms lectured each weekday starting on April 8.

The lectures dealt with location, grading, structural design, bridges, organization and administration of highway departments, production and use of surfacing materials, traffic control, equipment of all types, highway program costs and financing, highway types and uses, aerial surveys, airport construction and integration with road programs, motor freight and motor bus operations.

"These engineers will carry back to their jobs at home," according to Charles M. Upham, American Road Builders' engineers-director, who was the "dean" of this unusual school, "a comprehensive picture of the many billion dollar road building industry in the United States. All of them are on one year's leave from highway work, which accounts for their intense interest in securing the greatest possible benefit from their studies. I am sure the lessons they have learned, the study tours they made, the actual experience they have had, will be reflected for many years to come in the highway planning, methods and equip-

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OCTOBER 3, 4, 5 — COLUMBUS, OHIO — SEE PAGE 449

1824 EAST SECOND STREET · WICHITA, KANSAS

ment of the countries they represent."

Cordiality of the lecturers in seeking to convey their professional knowledge to listeners who speak in many tongues is reflected in the eagerness of the visiting engineers to improve their English, to ask intelligent questions, and to receive and help each other to receive, the greatest benefit from the class work. Some of the Chinese are fluent in several languages including Spanish, and many of the Latins are learning how to express engineering ideas as the Chinese do. Blackboards are used by students as well as teachers to set forth some formulae in mathematical detail, or when language fails. Question and answer sessions are a daily feature.

Inspection Tours

Inspection and study tours have been made of nearby Maryland and Virginia highways, including a visit to the tremendous earth moving job on the Shirley Memorial highway construction job below Alexandria, where hills are being leveled and valleys filled in at "production line" speed, with new equipment and technique developed in war time construction work.

The Chinese Marveled

Chinese engineers marveled at the employment of some 50 men, with only a handful of day laborers, on a job which if undertaken in China, they declared, would require employment of many thousands of laborers.

The classes were suspended for a two-day visit to Richmond and adjacent Virginia highways, with the entire tour under escort of state highway police who met the de luxe bus in which the party was traveling, at the District of Columbia line.

At the Virginia capital the Virginia Road Builders' Association was host at a "Good Neighbor" banquet, headlined by welcomes from Governor William M. Tuck, Mayor W. C. Herbert of Richmond, and Brig. Gen. James A. Anderson, state highway commission chairman.

After an all-day outing and jungle clearing demonstration at Gloucester, Virginia, staged by "Al" Evans, international contractor, where huge trees were pulled up and thrown around like jack-straws, the night air was filled with Spanish and North American popular songs as the party headed back to Washington.

The training course here and the study and inspection tour each taking five weeks, will be supplemented by several months actual employment of the visitors in a variety of engineering, manufacturing and construction jobs. Those who wish to specialize in certain phases of highway work will be given opportunity.

A.R.B.A. Road Show

The probable highlight of their year in the United States will be in attendance at the great Road Show and Highway Congress of the American Road Builders' Association, to be held for the first time since the war period in Chicago in February, 1947. Here under one roof they will find concentrated just about all they have seen and heard about road building since they arrived in this country.

The group will return to Washington for a final evaluation of the course before taking passage for home. One of the by-products of their work will doubtless be new impetus given to completion of the great Pan-American Highway connecting all capitals of the three Americas, much of which route is already finished or under construction.

The Nations Represented Are:

The nations represented here and their engineers are: Argentine, Mark Kivilevich and Juan Jose Vistalli; Bolivia, Roger Marie de Barneville; Brazil, Paulo Muller de Aguiar, Ricardo Mendes Goncalves and Jose Marie

Carre; Chile, Francisco Ramon Dick and Jorge Ricardo Sierralta; Colombia, David Moreno; Costa Rica, Federico Baltodano; Cuba, Juan Ignacio Planas; El Salvador, Geraldo Guillermo O'Byrne; Ecuador, Miguel Salem; Honduras, Rafael Alejandro Cervantes; Mexico, Hector Pena and Gustavo Alejandro del Rio; Panama, Rodolfo Florencio Alvarez; Paraguay, Hugo Jorge Scifart; Peru, Jose Felix Ventocilla; Uruguay, Luis Bancalari, and Venezuela, Rafael Recao.

From China Bureau of Highways at Nanking the engineers are: Yi Po Kung, Fu Kuei Chang, Yu Ming Shen, Cheng Chuan Chen, Kan Chui, Pink Chang Peng, Chi Chow, Tien Hsuan Chih, William Cheng, Tsai-Hsias Cheng, and Cheng-Hsien Liu. Roads and Bridges Department at Cairo, Egypt, is represented by Abdel Latif Eissa and Ahmed A. Karim, while N. R. Khursale comes from the Public Works Department at Hyderabad, India.

NEW YORK TO GET $100,000 TRAFFIC SURVEY

Reputedly the subject of fifty-three surveys in thirty-five years, New York City's knotty traffic problem will be studied once again at a cost of $100,000 and with the express approval of Mayor O'Dwyer by a "committee of recognized experts," including Gano Dunn, one of eleven men once said to understand the Einstein theory.

The Mayor disclosed in a letter to Edwin A. Salmon, chairman of the City Planning Commission, that he approved the proposal and would recommend it to the Board of Estimate.

The Mayor said the survey should produce "sound recommendations based on public interest." He said he wanted no survey based on "guess work or whim" when asked about former Mayor Fiorella H. La Guardia's opposition to further study.

Earlier the Mayor had received from Mr. Salmon a letter detailing the extent of the survey contemplated, the committee that would make it and the manner in which the appropriation would be spent.

Mr. Dunn, one of the nation's leading engineers, will be engaged as consultant-director for the project at a fee of $5,000. President of the J. G. White Engineering Corporation, he has directed great projects in all parts of the world, including the steam plant at Muscle Shoals, large dams in Chile and Mexico and irrigation work in Ethiopia.

Will Do the Field Work

Field work will be done by the engineering firms of W. Earle Andrews and Gilmore D. Clarke, described to the Mayor by Mr. Salmon as having had "wide experience in all aspects of community planning, with particular emphasis on arterial systems, transportation, traffic congestion, distribution of buildings and population and improved urban redevelopment projects." These firms will be engaged for fees aggregating $75,000.

Both Mr. Andrews and Mr. Clarke have been closely associated in the past with projects directed by Park Commissioner Robert Moses, a member of the City Planning Commission. Both worked with him in planning a postwar program of road, park and recreational areas developments for Portland, Ore., several years ago.

Mr. Clarke, dean of the Cornell School of Architecture, is known as a distinguished landscape architect.

Mr. Andrews, former general manager of the World's Fair, served for some years as general superintendent of the Park Department under Mr. Moses.

On the basis of the work of the Clarke and Andrews organizations, Mr. Dunn, according to the Salmon letter, will "coordinate the recommendations through the preparation of a suitable report containing satisfactory data for appropriate action designed to remedy the present conditions."

For its own purposes the Planning Commission asked $20,000 of the $100,000 appropriation with which to hire a director of research and planning to direct staff work. This staff will work closely with the committee of consultants on technical phases of the study, conferring at all times with the borough presidents, the Police and Fire Departments, the Department of Housing and Buildings and other public and semi-public agencies concerned.

Scope of the Survey

The scope of the survey, as outlined to the Mayor, follows:

"A general review of the planning of major traffic arteries and main thoroughfares for the proper movement of traffic in and out of congested areas. Such studies would indicate the extent to which major traffic arteries might relieve local congestion and the extent to which the local street pattern should be altered to meet traffic generated by the major arteries.

"The effect of concentrations of large buildings, rapid transit and other transportation facilities in certain areas of the city and the extent to which such congestion might be relieved through auxiliary transportation systems.

"A study of vehicular traffic as to origins and destinations, relationships to property uses, various classifications such as bus, taxicab, truck, passenger and other vehicles, including complete information as to movements, rates of speed, vehicular counts, etc.

"The entire problem of parking and detailed studies as to terminals, parking regulations, off-street loading and unloading, garage and parking facilities, etc.

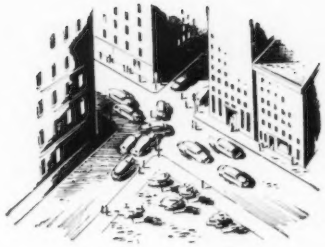
"Recommendations concerning more effective control of buildings and uses, police regulations, development of terminal, garage and parking facilities, revisions in arterial and main thoroughfare systems, and other factors which would tend to relieve street congestion and improve conditions for the general welfare."

KALAMAZOO KEEPS HER CUSTOMERS

Among the striking solutions to the downtown parking problem is that of Kalamazoo, Michigan, which offers shoppers a 400-car lot with free parking for two hours. A site for another lot of 180-car capacity is being acquired.

The benefit district plan adopted in Kalamazoo was worked out by city officials in close cooperation with merchants and property owners. The problem was seen as a mutual one—"Adequate parking means better and continued business. It preserves property values and taxes," as one city official said.

The cost of the present lot, $60,000 was met by an assessment formula whereby the small zone of property adjacent and near the lot paid 40 per cent, a larger zone of property further away, 40 per cent, and the large zone of fringe property, 20 per cent. Assessments, spread over 10 years were



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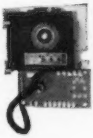


Type DJ synchronous controllers for replacing old Type TSM timers in G-E controllers. Provides a basic 6-circuit, 6-interval, non-interconnected controller with flashing feature.

Type DR remote-cycle change controllers can be furnished with triple reset equipment and flash, fire, and shut-down relays. Are interconnected to provide flexible control.

Type DM double and triple dial controllers provide several interval sequences or percentage splits to meet widely variable conditions.

Type D master controllers consist of one or more synchronous timers, with manual or automatic switches for interconnected secondary controllers (Types D, DR, DM). Indoor or outdoor types. For automatic supervision.

Type D pedestrian-actuated controllers are for pedestrian safe crossing. Available in many forms, depending on signals.

made on the basis of one-half on tax valuation and one-half on square footage of each owner's property.

After the first two free hours of parking a small charge is collected, but relatively few shoppers stay over the free time. After 6 p. m. when attendants leave, parking is free.

The lot is managed under a unique control. A Shoppers' Parking Lot Board of five merchants and property owners meets periodically with the Kalamazoo city manager to set operational policies.

Business men agree that the municipal lot has stabilized business. Prior to establishment of the lot one large chain store refused to locate in the city. After the lot was built an established chain store, which had planned to move to the outskirts of the city, decided to keep and enlarge its downtown premises.

This article is provided through the courtesy of the Automotive Safety Foundation, Washington, D. C.

Kalamazoo's 400-car parking lot, giving shoppers two hours of free parking, lies adjacent to the downtown business district. Built by the benefit district plan, the lot has helped Kalamazoo get a solid hold on her wide trading area.

NORTHWESTERN UNIVERSITY ANNOUNCES FELLOWSHIPS

The Northwestern University Traffic Institute has announced that sixteen $650 fellowships and sixteen $200 tuition scholarships will be available to police officers selected to attend its 1946 Fall course in traffic police administration.

The course is designed for commanding officers, police training directors and for those who may be expected to attain positions of command. Its purposes are to:

1. Provide a broad understanding of all phases of modern traffic control.
2. Develop ability to plan and execute an effective police traffic control program.
3. Develop ability to conduct traffic police training courses.
4. Encourage professional awareness and an interest in traffic policing as a career.

Lectures, demonstrations, conferences, field work and a one-week field trip constitute the plan of instruction.

The Kemper Foundation for Traffic Police Training, Chicago, provides the fellowships and scholarships to municipal police officers, and the Automotive Safety Foundation, Washington, D. C., offers the awards for state, provincial (Canadian) and county police officers.

Police officers who meet the following requirements are eligible as candidates for admission to the course and for award consideration. An applicant must:

1. Be a police officer in active service in a municipal, county, state or provincial police agency.
2. Have had at least one year's police experience.
3. Have the approval of his superintendent, commissioner or chief of police.
4. Be assured of a leave of absence from his department during which his salary will be paid.
5. Have the assurance of his superior that he will be returned to active service upon completing the course.
6. Agree to return to his department and remain in its employ for at least three years.
7. Be in good health and physically fit.

There are no educational pre-requisites. Veterans who meet the above requirements and who are admitted to the course may obtain financial aid under the G.I. Bill of Rights. Those who lack the required one year's service may substitute a year's service of police-type duty in the armed forces.

Applications for the 1946 fall course were submitted to the Traffic Institute, 1704 Judson Ave., Evanston, Ill., by July 1. Requests for application forms should be addressed to the director of training. The course begins September 9 and runs through January 25, 1947.

All applicants who meet the primary requirements are given comprehensive examinations and are interviewed by members of the Traffic Institute staff. Final selection of award winners is made by a board representing Northwestern University, the Kemper Foundation, the Automotive Safety Foundation and the International Association of Chiefs of Police.

A New Paint Machine That Does Tricks

by HENRY A. BARNES, (*Associate Member I.T.E.*)
Traffic Engineer, Flint, Michigan

THE PICTURE shows a new paint machine and road magnet that was constructed at the Department of Traffic Engineering Shops in Flint. There may not be too much unusual in appearance about this device, but there are some rather unique things built into the construction of the vehicle.

Directly behind the driver's cab is a hundred ampere direct current generator powered by a Ford V-8 engine. This will operate the road magnet which can be attached to the front of the machine and will lift a thousand pounds. It is not at all unusual to have the machine snag four hundred pound man-hole covers while picking up nails in the street. The generator is also equipped with jacks and other type devices to provide emergency lighting in case of bad accidents, fires, drownings, etcetera. Mounted behind the road magnet is a LeRoy one hundred and twenty cubic foot air compressor. This compressor can furnish power for air hammers on sign or signal construction jobs and also air for use in operating the paint machine attached to the truck.

Glass Bead Dispensor

To the left side of the machine is a small vehicle which is attached to the truck proper by a flexible arm. This machine contains a spray head and glass dispensor for installing Prismo safety line paint. All controls to this machine are mounted within the cab so the operator can control it without difficulty. The fifth wheel attached to the front of the machine is used for sighting along previously marked center line. The trailer of course is used only for carrying flags and because material tanks have not arrived as yet also carries the old paint machine which is being used for the paint supply until the new equipment is secured.

Prior to the construction of this machine it required five men to put down a center line of Prismo paint. Investigation discloses that about ten to twelve gallons of paint daily was the most that could be correctly applied by the use of hand operated machines. On the initial test the new machine put down nine gallons of paint on about a mile and a half of pavement in exactly three-quarters of an hour with two men.

It is anticipated that with this new type of equipment we will be able to apply from five to ten times as much center lining, lane lining and other markings than has heretofore been the case. We will not use Prismo paint in all cases, because stop lines, school cross lines, etcetera, which have to be painted very frequently and particularly school cross walk lines which only have a meaning during day light hours do not justify such expensive paint.

Quick Drying Paint

This Department is experimenting with, in conjunction with a leading paint manufacturer, a new type pavement marking paint, which they claim will dry in from nine to fifteen seconds sufficiently to allow traffic to cross the lines. If such paint proves to be satisfactory a further aid to the drying will be installed in the form of an approximate fifteen foot boom having about thirty infra-red two hun-

The paint machine in operation.

dred and fifty watt lamps. This boom will be hung at the proper distance from the pavement to insure maximum efficiency from the lights and should considerably speed up the drying process. Power for the light can be had from the road magnet generator. If this proves satisfactory, and different paint manufacturers have indicated that they believe it will be satisfactory, it will eliminate the costly use of flags on pavement marking lines.

The entire outfit (even the magnetic bar for the road magnet) was designed and constructed in our own shops by regular employees of this Department. Of course the compressor was purchased as a complete unit, skid mounted and installed on the truck chassis after being received. The truck itself was originally a ton and a half Chevrolet panelled job and the body was cut down to a single seat cab position in order to provide for the new equipment. This new vehicle, while not only making it possible to clean nails, wire and scrap materials in the street, also enables us to paint probably from four to five miles per hour of straight reflectorized center lines.

This device effects a considerable saving and will provide a very great additional amount of street markings, which seem to do an excellent job in helping to control traffic in congested areas.

ITE NEWS AND PERSONALS

POWELL REPORTS PROGRESS IN DEVELOPING HISTORY OF TRAFFIC ENGINEERING

by W. B. POWELL, *Editor, History of Traffic Engineering*
Consulting Engineer, Buffalo, N. Y.

Just because there has been no recent mention of the proposed History of the Profession does not warrant the assumption that the project has been abandoned. Quite the contrary is the fact. But as the accumulated mass of material has been analyzed for organization into a connected story, the scope of the undertaking has expanded so amazingly that the first efforts have been entirely inadequate. Thus it became apparent that two essential tools must be developed.

1. A chronological index of historic events
2. A subject matter index that would bring related items together

The work of listing each item of information on duplicate cards for filing in these two categories is well started, and these records should eventually be of significant value to the Secretary's office, especially as the numbering system employed for the subject matter index is the one already employed in cataloging the Institute library.

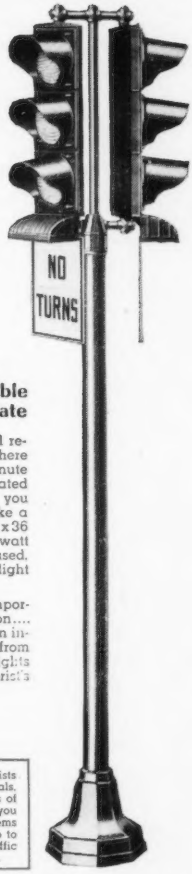
So far only the material that was contributed directly to the Historian has been indexed, leaving vast areas of library and other sources yet to be explored. But enough has been done to suggest the innumerable ramifications into which such research must lead, and some very interesting questions are raised in consequence.

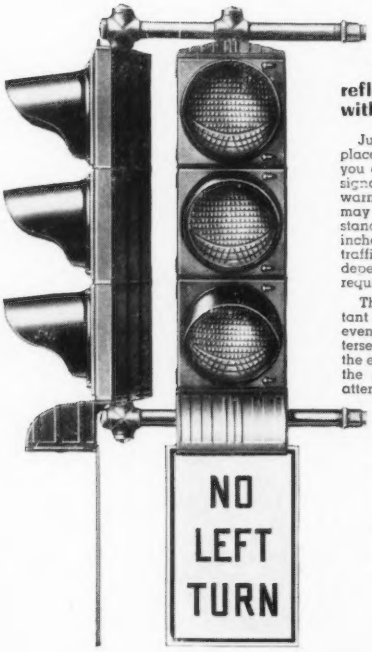
For instance, three cities decided almost simultaneously to appoint official traffic engineers in 1924, these being apparently the first in this field. But Chicago, Providence and New York were actively engaged in similar work, as were some other cities; did any of them give official recognition to the budding profession even sooner? Certainly some of the States did for in 1921 Ohio appointed a traffic engineer officially while Minnesota assigned similar work without the title to one of its highway engineers. Yet Wisconsin, Michigan, and other States formed the Mississippi Valley Association about that time; when did they appoint their traffic engineers? And what were the States along the Atlantic Seaboard doing? Most of them had advanced highway programs under way with competent engineers; surely some of them must have had official recognition as traffic experts.

Then in the realm of self-propelled vehicles, we know when and where the first automobiles and trucks were operated; who can tell about the first electric carriage, the first bus or taxicab, or in the transit field when did the first cable car, overhead or underground or trackless trolley make their appearance on our highways?

Information about the sudden burst of signals all over the country is fairly complete, but the use of those rotating signs that the police operated manual-

Now..... you can have an *illuminated sign* on any CROUSE-HINDS one-way or adjustable traffic signal.





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Just remove the end plate and replace it with the base light and there you are ... with an up-to-the-minute signal that can carry any illuminated warning or information sign that you may desire. The base will take a standard sign 12 x 18, 18 x 24 or 24 x 36 inches. Either one or two 60-watt traffic signal lamps may be used, depending upon the amount of light required.

This illuminated sign is an important safety measure in any location.... even at brightly lighted downtown intersections where the extra light from the efficient base reflector, highlights the sign and attracts the motorist's attention.

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems ... from simple installations up to the most complex heavy traffic problem. Send for your copy.

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ly to direct traffic at intersections (which are sometimes called semaphores) before the automatic signals were invented seems to be shrouded in mystery so far as dates are concerned. And what about channelizing islands such as were in the Champs Elysees in Paris long before the auto was invented? Or rotary movement around an island in the center of large intersections like those in Washington? Signs were in copious use long before any attempts were made to standardize them, yet little is definitely known about them, or about buttons for pavement markers.

So we might go on asking intriguing questions in many other directions, but enough has been said to suggest the magnitude of the task. Can you answer any of them, or can you contribute something else of similar value? If so, do not hesitate, jot down a memorandum and mail it to Editor, History of Traffic Engineering, W. B. Powell, 715 Delaware Ave., Buffalo 9, N. Y. And blessings be upon you for your help!

Washington D. C. ITE Section

The Washington Section held its Second Annual Meeting at the Hotel Fairfax June 20, 1946. The business portion of the program was concluded with the election of the following officers for the new fiscal year: For President, William G. Eliot, 3d; for Vice President, Martin C. Stark; for Secretary-Treasurer, Earl Allgaier.

The Section enjoyed the showing of the two 20-minute sound films, "Life Stream of the City" and "X Marks the Spot."

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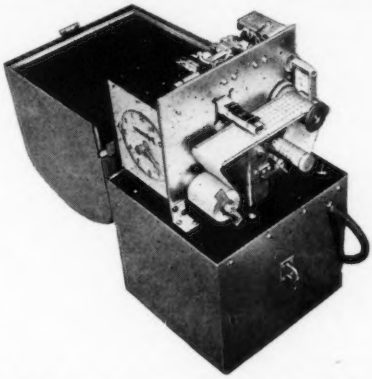

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2. "Mechanical counting equipment supplies most of the traffic information gathered."

3. "In every case (of planning for new roads and improvement of old roads) the value of traffic plays a very important part in determining the extent of such work and mechanical counting equipment has been found to be essential in economically gathering such data."

The Trafficounter is twice as fast as any other counter of motor traffic; essentially an electric counter which records the over-lapping cars as they cross the detector. It assures accuracy, is on the job 24 hours a day, and will save many man hours. **Streeter-Amet Company,** 1726 Belle Plaine Avenue, Chicago 13, Illinois.

STREETER-AMET

Seventeen members and guests were present as follows:

Earl Allgaier	D. G. Mickle
R. H. Burrage	J. H. Mitton
W. G. Eliot, 3d	C. W. Prisk
G. K. Gravelle	M. C. Stark
E. H. Holmes	C. G. Stoneburner
LeVerne Johnson	R. O. Swain
F. M. Kunz	P. E. Taylor
D. W. Loutzenheiser	L. R. Watson
K. C. McCloskey	

PERSONAL ITEMS

John Curtin Award

John F. Curtin, transportation engineer now associated with Hawley S. Simpson, (Mem. ITE) — Consulting Transportation Engineer in Philadelphia—has just been awarded the Meritorious Civilian Service Award for his work on the development of passenger transportation services at the atomic bomb project.

In the Citation, General Brehon Somerville stated that the award was made

"In recognition of exemplary performance of and devotion to duty in the Manhattan District of the Corps of Engineers. His ability and resourcefulness in supervising the development of and administrating all bus operations of the largest transit system in the South, procuring equipment, settling Labor difficulties and public relations problems, and a share-the-ride program to insure maximum use of private vehicles for transporting employees to and from the Clinton Engineer Works, contributed to the successful completion of the Atomic Bomb."

At Oak Ridge, Tennessee, Curtin was Chairman of the Transportation Board which organized the system. He later acted as Transportation Engineer in charge of the 800-bus operation furnishing transit service to Oak Ridge and outlying manufacturing plants within the Government reservation, as well as linking 150 nearby communities to the project.

Since last fall, Curtin has been handling assignments for Hawley S. Simpson at Fifth Avenue Coach Company, Trenton Transit, York Bus Company, and the Wilkes-Barre Railway Corp., Springfield Street Railway Company and other transit properties.

Ernest P. Goodrich, (Member I. T. E.), New York Consulting Engineer, is a member of the New York City Regional Planning Association's Traffic Committee which recently recommended action by the city to create a vehicular traffic authority to erect public parking garages, study parking and control trucks.

J. A. Carrothers, (Associate Member I.T.E.), recently acted as consultant to "Future Springfield Inc.", a citizens group in Springfield, Mass., in preparation of a traffic report. This organization was set up as a fact finding body to help guide the city's development. Carrothers recently completed the traffic engineering course at the Yale University Bureau of Highway Traffic following his return from France as a civilian traffic engineer with the U. S. Army Transportation Corps.

George Barton, (Member I.T.E.), has assumed a new position with the Chicago Motor Club as Vice President of the Finance Department. He was formerly Director of Safety and Traffic Engineering, and was on leave of absence serving as a Lieutenant Colonel, AUS overseas.

Matthew Sielski, (Member I.T.E.), was recently named Director, Safety & Traffic Engineering Dept., Chicago Motor Club. "Mat" reports, incidently, on the annual "F and F meeting" at Balsam Lake, June 20 to 25 as follows:

"Among the F & F'ers present were Bill McConochie, Howard Ilgner, Wayne Volk, John O'Mara, Wm. Abbott, Dr. Corbett, Norman Damon and myself. We arrived there on the opening of the bass season and everyone knew about the opening date but the bass. We apparently should have hired a publicity agent for the session because the striking was very poor, except for Bill McConochie's skill in catching two bass on one cast."

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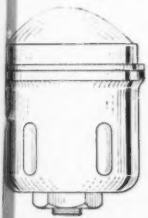

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MANY MORE U. S. STANDARD APPROVED SIGNS LISTED IN THE LATEST EDITION OF THE NEW GROTE "FIREBALL" CATALOGUE

FREE A Guide to Effective City Wide Safety Campaigns. Send Today For Your Copy of "SAFETY IS THE IDEA" . . .

James G. Hayden, (Member I.T.E.), Highway Traffic Engineer overseas, on leave of absence from Association Transport Inc., N. Y. C., writes as follows:

"I have had an interesting time over here. I left CONAD approximately a year ago (Wes Bellis of N. J. and I were assigned with that outfit) and went to the Assembly Area Command where I had charge of maintenance, equipment supply and safety for Motor Transport. When AAC was absorbed by the OISE Intermediate Section in September I succeeded to the same job with that organization.

Bill Heinrich (of Travelers in Hartford), civilian safety advisor to the War Department, and Lt. Col. Ed. Granniss (formerly with the National Conservation Bureau and now back with them), Safety Director for the Office of Provost Marshal General, were over here surveying the accident picture and prevailed on me to lend a hand, which lead to my changing horses to the Office of Theater Provost Marshal about the first of the year. Since that time I have been assistant to the Theatre Safety Director.

"Our big job so far has been to take the kinks out of the accident reporting procedure. We are just beginning to get accurate reports on the motor vehicle and disabling injury experience. The accident trend isn't at all good at present and we are hitting all angles. In March we put on a very successful traffic safety campaign consisting of pledges signed by all drivers of military vehicles(German and French drivers, as well as the U. S.), daily safety messages handed out to all drivers and highlighted over the radio, on bulletin boards, in the Stars and Stripes and unit newspapers, on the bottom of correspondence and even used by some units in answering the telephone. The campaign slogan "Death is so Permanent—Drive Carefully" likewise was used and appeared on some four or five thousand 4' x 4' signs and 25' banners along the highways. Three special safety posters were produced and distributed down to and including unit level. Besides the regular spot announcements we arranged for a couple of special radio shows on safety. Special articles were carried in most all the Army publications. There were roadside exhibits of wrecked vehicles and scores of lobby exhibits.

"All this activity tended to develop interest in safety but did not bring down the accident rate. It has been an excellent example of what can be expected of a campaign. We are now concentrating on improving the maintenance, reducing unauthorized use of vehicles, tightening up on driver selection. examination and training standards, requiring more time to be spent on safety by Major Command and unit safety officers, and in convincing Military Government they must jump into the breach with both feet and carry on a continuous program to improve civilian walking, driving and cycling habits.

"The Germans are as bad as the French, if that is possible, when it comes to driving, and certainly worse in the jaywalking department. They use so little caution that one is prompted to ask if they ever were accustomed to vehicular traffic. From all reports they were, but one would never guess it. The grown-ups are as bad as the children. One has to be on his toes all the time while behind the wheel.

"As a side line (this paper wouldn't make good toilet paper but is the best Uncle Sam seems to be able to provide at the moment), I am about to come out with a revision of the Standard Sign Manual listing the permissable signs and specifications to be used in the theatre. This manual was first put together by Dick Wilson of the California State Highway Dept. who preceeded me here at TPM. For the most part the manual will follow stateside standards except for limitations on overall size and use of colors other than black, white and yellow because of lumber and paint shortages.

"Because the civilian population in the aggregate cannot read English, both the domestic and the U. S. signs are used. The continental sign system is used universally and it isn't half bad. One sees few stop signs . . . the accepted practice both here and in France is to honk the horn, close the eyes and go on through—if you can make it without a crash.

"Have rambled enough for one dose. Hope this finds you all well. Give my regards to Ted Matson and any others I may know."

Cordially,

James G. Hayden, Civ.
Safety Section, Office of
Theater Provost Marshal, USFET
APO 757, c/o PM, N. Y. C.

Charles Bechenbach, (Member I.T.E.), Major, Army Transportation Corps, writes as follows:

"I am at the present time a patient in the O'Reilly General Hospital in Springfield, Missouri, where I am taking treatment to correct a broken vertebra, incurred shortly after I came into the Army. It was not properly treated at first, so now it may require an operation—bone fusion—though, I hope not. At any rate, I was on the way back to Cincinnati when I was hospitalized

for influenza and they found the faulty joint, which has caused me plenty of misery for three years. So I was ordered back to active duty status and assigned to the detachment of patients here."

Arthur Naquin, (Associate Member I.T.E.), Safety Counselor for New Orleans Public Service, Inc., spent a week in New York City last month helping to organize the safety program for the EBASCO client companies' safety meeting during October in Chicago.

Paul Ristroph, (Associate Member I.T.E.), has returned from the Army to take up his old duties as Traffic Engineer for the New Orleans Public Service Inc.

Henry K. Evans, (Associate Member I.T.E.), who recently returned from the Armed forces, has been appointed Director of the Traffic Engineering Division of the National Conservation Bureau, accident prevention division of the Association of Casualty and Surety Executives. This position was formerly held by Harold Hammond, who resigned to become manager of the Washington D. C. office of the American Transit Asociation in 1944.

As Director of the Traffic Engineering Division, Mr. Evans will be in charge of traffic surveys, traffic engineering publications and accident and traffic engineering research and conferences

NEWS FROM HERE AND THERE

ASF Establishes Uniform Laws Division

To implement and support the recommendation of the President's Highway Safety Conference that all states and municipalities adopt the standards set forth in the Uniform Vehicle Code and the Model Traffic Ordinance, a Uniform Laws Division has been established within the Automotive Foundation staff, according to a recent announcement by President Pyke Johnson.

Under the direction of Mr. Louis R. Morony, the Division will develop information and materials pertaining to progress toward uniformity and will continue to make available on request staff advisory and consulting services to public officials and others.

The work will include comparative studies of state laws and city ordinances with recognized uniform codes, as well as comparisons of present administrative procedures in the motor vehicle field with nationally recommended practices. Pending legislation will also be analyzed to determine its degree of compliance with the Uniform Vehicle Code, Model Traffic Ordinance, and other recognized standards.

Present members of the staff assisting in this work will be Joe Mattson, Pacific Coast representative, and Anthony Antony, recently returned from service in the Army, who have been associated with Mr. Morony in similar work in the past.

VACANT APARTMENTS
NEW CARS and HOTEL ROOMS
ARE HARD TO FIND!
SEE BOTTOM OF PAGE 449

Parking and O & D Being Studied In Seattle

An Origin and Destination Survey and a Parking Survey are being made by the combined forces of the Public Roads Administration, the State Highway Department of Washington, and the Traffic Engineer's Office of the City of Seattle, within the city and the metropolitan area adjacent to Seattle.

This is the first survey of this character being made on the Pacific Coast, according to Arch Bollong, who feels fortunate in procuring this survey which is needed in any traffic planning for the future.

Washington Agency Announces Plan For Providing More Parking Space

A three-way program to relieve the critical motor vehicle parking shortage in the Nation's Capital has been announced by the District of Columbia motor vehicle parking agency. Negotiations are underway for:

1. A thousand parking spaces in the parking area of the War Department's Pentagon Building, just across the Potomac River in Virginia.

2. Return to public use of parking garages taken over by Government agencies during the war.

3. Operation of express buses over express streets to the downtown business area.

The parking agency said a survey shows hundreds of Virginia cars parked daily in the downtown area and it is believed that many of these would be parked at the Pentagon if adequate and speedy bus service is provided.

In a canvass of garages taken over by the Federal agencies several were found to be only partly used for car storage. In some cases space was used for storage of boxes and bundles while motorists searched in vain for a place to leave their jalopies.

Scotchlite Appoints New Managers

Donald Opstad, formerly Eastern Sales Manager, Scotchlite Division, Minnesota Mining and Manufacturing Co., St. Paul, Minn., was recently named National Sales Manager of the Traffic and Safety Division of that Organization. Succeeding Mr. Opstad as Eastern Sales Manager is Mr. Fred Gunning, who was with the Scotchlite Division in the Chicago area previously.

Lingering Lips Wins Photography Contest

The Northwestern University Traffic Institute has announced the winners in its fourth nation-wide police photography contest which closed June 1.

One hundred and forty-nine entries were submitted by members of city, county and state law enforcement agencies throughout the country. Entries were judged in five classifications: traffic policing, general policing, police identification, safety education and dramatic or human interest.

First-place winners in each classification received $25 in U. S. savings bonds, while second-place winners each got $10 in U. S. savings stamps.

Although no grand award was given, the photograph, "Lingering Lips," which won first place in the police identification group for Lt. Lee Jones of the Los Angeles Police Department, was cited by the judges as the most outstanding picture in the contest. This photo showed the lip print of a hit-and-run accident victim left on the fender of the suspected driver's car and lip prints taken from

the body of the victim. The comparison of prints resulted in conviction and prison sentence for the driver of the hit-and-run car.

All photos submitted were taken by members of police departments in line of duty. Contest judges were: Arthur J. Muhlke, chief of police, Racine, Wis.; Paul Jones, director of public information, National Safety Council, Chicago, and Wesley Brown, Jr., assistant director of training for the Traffic Institute.

There were 26 awards for first and second places and honorable mention.

Winners' names and brief descriptions of the first place winning pictures in each classification follow:

1st Place, Traffic Policing — "End Of The Chase," by Thomas C. Burke, Police Department, Greenwich, Conn. Picture shows car that struck gasoline pump. Car, which contained lawbreakers, was being chased by police at high speed; failed to make curve and crashed.

1st Place, Safety Education—"Two Beers," by Walt Wilkinson, Los Angeles Police Department. Photo shows obviously befuddled driver holding up two fingers, while police officer examines whiskey bottle taken from driver's car.

1st Place, Dramatic or Human Interest—"Death On A Motorcycle," by Walter Sokol, Michigan State Police. Man and woman riding together on motorcycle struck car which had stopped in center of highway to let motorcycle pass. Bike hit car going about 80 m.p.h. Both bike riders were killed. Photo shows victims still sitting on motorcycle, which remained upright after hitting car.

1st Place, General Policing—"Strike Blockade," by C. W. Nelson, Indiana State Police. Picture shows highway clogged with cars and workers outside struck industrial plant. State policemen are at the scene.

1st Place, Police Identification—"Lingering Lips," by Lt. Lee Jones, Los Angeles Police Department. (Described previously).

N. U. T. I. Graduates Police Officers

Graduation exercises for the 29 police officers attending the Northwestern University Traffic Institute's spring course in traffic police administration were held June 18 and 19 in Evanston, Ill.

The graduation dinner was held Tuesday night, June 18, at the Georgian Hotel, with Lt. Col. Franklin M. Kreml, director of the Institute, serving as toastmaster. Patrolman Vernon C. Gedney of the Connecticut State Police, delivered the valedictory address.

James S. Kemper, president of the Kemper Foundation for Traffic Police Training, Chicago, and Norman Damon, vice-president of the Automotive Safety Foundation, Washington, D. C., also spoke. Captain Dan Hollingsworth, of the Oklahoma City Police Department, represented the Institute alumni. Colonel Kreml presented Traffic Institute keys to the graduates.

The class received certificates in traffic police administration at the 88th commencement exercises of Northwestern University, June 19 on the campus.

Members of the spring class began their studies of traffic control and accident prevention at the Institute on February 4. The class consisted of 17 municipal police officers, 10 state police and highway patrol officers, one regular Army officer and one instructor from the Central Police College, Nanking, China. Fifteen of the 29 students were veterans of the armed forces.

The municipal police officers attended the course on fellowships and

scholarships provided by the Kemper Foundation for Traffic Police Training, while the state men received awards from the Automotive Safety Foundation.

Members of the 1946 spring class are:

Sgt. Clifford Aden, Washington State Patrol
Ptlm. Burton L. Bailey, Concord, N. H.
Lt. Ralph D. Bonifield, Detroit, Mich.
Lt. Robert E. Brittin, Lincoln, Neb.
Ptlm. Harry H. Cable, Colorado State Patrol
Pea-heng Chao, Central Police College, Nanking, China.
Ptlm. Reginald W. Cooley, Santa Barbara, Calif.
Sgt. John A. De Pew, Illinois State Police
Ptlm. Edward J. Dooling, Connecticut State Police
Ptlm. Vernon C. Gedney, Connecticut State Police
Sgt. Harvey E. Hastings, Spokane. Wash.
Ptlm. Dale W. High, Colorado State Patrol
Sgt. William J. Hilbruner, Portland, Ore.
Lt. Col. Edwin N. Howell, Inf., U. S. A:
Ptlm. Howard W. Jones, El Paso, Tex.
Ptlm. Albert H. Kimball, Connecticut State Police
Ptlm. Thomas C. Laws, Texas Highway Patrol
Ptlm. John M. Matcheski, Meriden, Conn.
Det. George C. O'Neal, Tulsa, Okla.
Ptlm. Chester Partis, Everett, Wash.
Ptlm. Louis L. Pfohl. Buffalo, N. Y.
Ptlm. George F. Rasmussen, Alameda, Calif.
Sgt. Ivan A. Robinson, Jr., Glendale, Calif.
Ptlm. Glenn M. Schultz, Montana Highway Patrol
Ptlm. Cecil L. Simmons, Grand Rapids, Mich.
Ptlm. James W. Slusser, Pittsburgh, Pa.
Ptlm. George E. Tobin, California Highway Patrol
Ptlm. Floyd W. Trickey, Watertown, N. Y.
Sgt. Haskell Welch, Phoenix, Ariz.

ON THE SHELF —

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★ ★ ★

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The odds are against the pedestrian and jaywalker who tries to outguess automobile speed. On the average an individual crosses a 30-ft. street in about seven seconds. Obviously he has little chance to compete with a motor vehicle travelling at 25 miles per hour, which in the same operation of seven seconds, covers 262½ feet. The odds are over eight to one that he will be hit.

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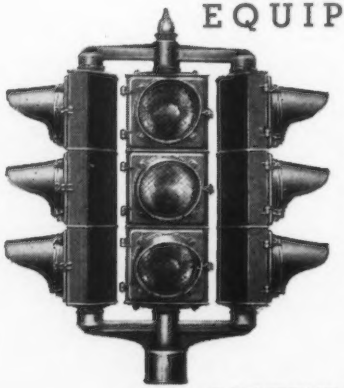

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